Collocation

19. Measurement	
Percent Missed Collocation Due Dates	
Definition:	
The percent of SWBT caused missed due dates for Collocation projects.	
Exclusions:	
None	
Business Rules:	
The clock starts when SWBT receives, in compliance with the approved tariff, payment and return of proposed layout for space as specified in the application form from the CLEC and the clock stops when the collocation cage is complete and ready for CLEC occupancy. Due Date Extensions will be extended when mutually agreed to by SWBT and the CLEC, or when a CLEC fails to complete work items for which they are responsible in the allotted time frame. The extended due date will be calculated by adding to the original due date the number of calendar days that the CLEC was late in performing said work items. Work items include but are not limited to: • CLEC return to SWBT corrected and complete floor plan drawings • CLEC placement of required component(s) • If the business rules and tariff are inconsistent, the terms of the tariff will apply.	
Levels of Disaggregation:	
• Physical, virtual, and additions	
Calculation:	**Report Structure:**
(count of number of SWBT caused missed due dates for physical collocation facilities ÷ total number of physical collocation projects) * 100	Reported for individual CLEC and all CLECs
Benchmark:	
95% within the due date. Damages and Assessments will be calculated based on the number of days late.	

Billing

20. Measurement	
Billing Timeliness (Wholesale Bill)	
Definition:	
Billing Timeliness measures the length of time from the billing date to the time it is sent or transmitted (made available) to the CLECs.	
Exclusions:	
Excludes Weekends and Holidays	
Business Rules:	
The transmission date is used to gather the data for the reporting period. The measure counts the number of workdays between the bill day and transmission date for each bill.	
Levels of Disaggregation:	
None	
Calculation:	**Report Structure:**
(Count of bills transmitted on time ÷ total number of bills released) * 100	Reported for CLEC and all CLECs
Benchmark:	
95% within 6th workday	

Attachment A-3

CALCULATION OF PARITY AND BENCHMARK PERFORMANCE and LIQUIDATED DAMAGES AND VOLUNTARY PAYMENTS

Z-Tests

- Modified Z-tests, as outlined below, will be used to determine parity when comparing SWBT's and the CLEC's results for the difference between two means or two percentages, or the difference in two proportions.

- The modified Z-tests are applicable if the number of data points is greater than 30 for averages or means. Measurements with less than 30 data points do not provide a large enough sample to provide statistically reliable results.

- For measurements which are percents or proportions the sample size is dependent on the actual percents or proportions being tested. The required sample to provide statistically reliable results is the value of nILEC, which satisfies the following equations:

  $N_{ILEC} * p_{ILEC} > 5$ and $n_{ILEC} * (1-p_{ILEC}) > 5$
  And $n_{CLEC} * p_{CLEC} > 5$ and $n_{CLEC} * (1-p_{CLEC}) > 5$

- Parity exists when the measured results in a single month (whether in the form of means, percents, or proportions) for the same measurement, at equivalent disaggregation, for both SWBT and the CLEC are used to calculate a Z-test statistic and the resulting value is no greater than the critical Z-value as discussed below.

- For parity measurement results that are expressed as averages or means:

  $Z = (DIFF) / \delta_{DIFF}$

  Where;
  $DIFF = M_{ILEC} - M_{CLEC}$
  M_{ILEC} = ILEC Average

M_{CLEC} = CLEC Average
$\delta_{DIFF} = SQRT\ [\delta^2_{ILEC}\ (1/n_{CLEC} + 1/n_{ILEC})]$
δ^2_{ILEC} = Calculated variance for ILEC.
n_{ILEC} = number of observations or samples used in ILEC measurement
n_{CLEC} = number of observations or samples used in CLEC measurement

- For benchmark measurement results that are expressed as averages or means:

$$z = (DIFF) / \delta_{DIFF}$$

Where;
DIFF = Benchmark – M_{CLEC}
M_{CLEC} = CLEC Average
$\delta_{DIFF} = SQRT\ [\delta^2_{CLEC}\ (1/n_{CLEC})]$
n_{CLEC} = number of observations or samples used in CLEC measurement

- For parity measurement results that are expressed as percentages or proportions:

Step 1:

$$\rho = \frac{(n_{ILEC}P_{ILEC} + n_{CLEC}P_{CLEC})}{n_{ILEC} + n_{CLEC}}$$

Step 2:

$$\sigma_{PILEC-PCLEC} = sqrt[[\rho(1-\rho)]/n_{ILEC} + [\rho(1-\rho)]/n_{CLEC}]$$

Step 3:

$$Z = (P_{ILEC} - P_{CLEC})/\sigma_{PILEC-PCLEC}$$

Where: n = Number of Observations
P = Percentage or Proportion

- For benchmark measurement results that are expressed as percentages or proportions:

$Z = (\text{benchmark} - P_{CLEC})/(\text{sqrt}(\text{benchmark}*(1-\text{benchmark})/ n_{clec}))$

Where: n = Number of Observations
P_{clec} = Percentage or Proportion for CLEC

- For measurement results that are expressed as rates or a ratio:

$z = (DIFF) / \delta_{DIFF}$

Where;
$DIFF = R_{ILEC} - R_{CLEC}$
$R_{ILEC} = num_{ILEC}/denom_{ILEC}$
$R_{CLEC} = num_{CLEC}/denom_{CLEC}$
$\delta_{DIFF} = SQRT [R_{ILEC} (1/denom_{CLEC} + 1/ denom_{ILEC})]$

K Value and Critical Z-Test Value

- A K value is calculated to mitigate random variation. SBC will pay liquidated damages on measurements in excess of the K value.

- For single tier systems for which liquidated damages are payable only to the CLEC, K is defined as alpha*N, where N = number of measurements applicable to a CLEC and alpha is the significance level of the statistical test. Alpha = 0.05 with a corresponding critical z-test value of 1.645.

- For two tier system for which liquidated damages are payable to the CLEC and voluntary payments to the state, the K table calculation is shown below.

K is determined by solving the following equation for K and p:

$$1-(1-p^3)^N + P(K,N,p) = 0.05$$

Where N = number of measurements
P(,,) = cumulative probability function for a binomial random variable
K is the largest integer for which P(K-1,N,0.05) is < 0.95 and P(K,N,0.05) > 0.95

Tables for the actual values of K and p for any value of N can be provided.

Note: each value of N results in a distinct combination of the values for K and p.

- For a three tier system where liquidated damages are payable to the CLEC, and voluntary payments are payable to the state and the FCC, the K table calculation is shown below.
  K is determined by solving the following equation for K and p:

$$1-(1-p^3)^N +1-(1-p^3)^N+ P(K,N,p) = 0.05$$

  Where N = number of measurements
  P(,,) = cumulative probability function for a binomial random variable
  K is the largest integer for which P(K-1,N,0.05) is < 0.95 and $P(K,N,0.05) > 0.95$

  Tables for the actual values of K and p for values of N can be provided.
  Note: each value of N results in a distinct combination of the values for K and p.

- The applicable K value is determined based upon the total number of measures with a sample size of 30 or greater that are required to be reported to a CLEC. For any performance measurement, each disaggregated category for which there is a minimum of 30 data points constitutes one "measure" for purposes of calculating the K value.

- Before calculating the liquidated damages that would apply per measurement, exclude the measurements equivalent to the K value as follows:

  - Determine the number of measures with a sample size greater than 30 that are "non-compliant" for the individual CLEC for the month, applying the parity test and benchmark provisions provided for above.

  - Sort all measures having non-compliant classification with a sample size greater than 30 in ascending order based on the actual Z test statistic

  - Exclude the first "K" measures. This excludes the K measures which are the closest to being in parity.

  - For the remaining non-compliant measures that are above the K number of measures, the liquidated damages per occurrence or per measurement are calculated as described further below.

Methods Of Calculating Per Occurrence Liquidated Damages/Voluntary Payments

- Measures for Which the Reporting Dimensions are Averages or Means.

  Step 1: Calculate the average or the mean for the measure for the CLEC that would yield the critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure.

  Step 2: Calculate the percentage difference the between the actual average and the calculated average.

  Step 3: Multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amount taken from the Liquidated Damages/Voluntary Payments Table to determine the applicable liquidated damages/voluntary payments for the given month for that measure.

- Measures for Which the Reporting Dimensions are Percentages.

  Step 1: Calculate the percentage for the measure for the CLEC that would yield the critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure.

  Step 2: Calculate the difference between the actual percentage for the CLEC and the calculated percentage.

  Step 3: Multiply the total number of data points by the difference in percentage calculated in the previous step and the per occurrence dollar amount taken from the Liquidated Damages/Voluntary Payments Table to determine the applicable liquidated damages/voluntary payments for the given month for that measure.

- Measures for Which the Reporting Dimensions are Ratios or Proportions.

  Step 1: Calculate the ratio for the measure for the CLEC that would yield the critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure.

Step 2: Calculate the percentage difference between the actual ratio for the CLEC and the calculated ratio.

Step 3: Multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amount taken from the Liquidated Damages/Voluntary Payments Table to determine the applicable liquidated damages/voluntary payments for the given month for that measure.

Methods Of Calculating Per Measurement Liquidated Damages/Voluntary Payments

- Per measurement liquidated damages/voluntary payments are payable as detailed in the Liquidated Damages/Voluntary Payments Table below if the actual Z-value exceeds the critical Z-value.

ATTACHMENT A-4

LIQUIDATED DAMAGES TABLE FOR TIER-1 MEASURES

PER OCCURRENCE						
Measurement Group	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
High	$150	$250	$500	$600	$700	$800
Medium	$ 75	$150	$300	$400	$500	$600
Low	$ 25	$ 50	$100	$200	$300	$400

PER MEASURE/CAP						
Measurement Group	Month 1	Month 2	Month3	Month4	Month 5	Month 6
High	$25,000	$50,000	$75,000	$100,000	$125,000	$150,000
Medium	$10,000	$20,000	$30,000	$40,000	$50,000	$60,000
Low	$ 5,000	$10,000	$15,000	$20,000	$25,000	$30,000

ASSESSMENT TABLE FOR TIER-2 MEASURES

Per Occurrence

Measurement Group	
High	$500
Medium	$300
Low	$200

Per Measure/Cap

Measurement Group	
High	$75,000
Medium	$30,000
Low	$20,000

FCC MEASUREMENT LIST										
	FPP	Benchmark/ Parity	Measurement Name	Tier I			Tier II			Pay
				Y1	Y2	Y3	Y1	Y2	Y3	
OSS	1	B	% FOC received in 'X' hours	L	L	L	M	M	M	obs/ca
Provisioning	2a	P	% SBC caused missed due dates - POTS	H	H	H	H	H	H	obs
	2b	P	% SWBT caused missed due dates - Design	H	H	H	H	H	H	obs
	2c	P	% SWBT caused missed due dates	H	H	H	H	H	H	obs
	3a	P	Percent Trouble Report Within 10 Days (I-10) of Installation - POTS	H	H	H	H	H	H	obs
	3b	P	Percent Installation Reports (Trouble Reports) Within 30 Days (I-30) of Installation - Design	H	H	H	H	H	H	obs
	3c	P	Percent Installation Reports (Trouble Reports) Within 30 Days (I-30) of Installation - UNE	H	H	H	H	H	H	obs
	4a	P	Mean Installation Interval - POTS	H	H	H	H	H	H	obs
	4b	P	Average Installation Interval - POTS	H	H	H	H	H	H	obs
	4c	B	% Installation completed in 'X' days - UNE	M	H	H	M	H	H	obs
	5a	P	Average Delay Days For SWBT Caused Missed Due Dates - POTS	M	M	M	*	*	*	obs
	5b	P	Average Delay Days For SWBT Caused Missed Due Dates - Design	M	M	M	*	*	*	obs
	5c	P	Average Delay Days For SWBT Caused Missed Due Dates - UNE	M	M	M	*	*	*	obs
	6	P	Average installation interval - DSL	H	H	H	H	H	H	obs
	7	P	Average response time for loop makeup information	L	L	L	M	M	M	obs
Maintenance	8a	P	Percent Missed Repair Commitments - POTS	H	H	H	H	H	H	obs
	8b	P	Percent Missed Repair Commitments - UNE	H	H	H	H	H	H	obs
	9a	P	Percent Repeat Reports - POTS	H	H	H	H	H	H	obs
	9b	P	Percent Repeat Reports - Design	H	H	H	H	H	H	obs
	9c	P	Percent Repeat Reports - UNE	H	H	H	H	H	H	obs
	10a	P	Receipt To Clear Duration - POTS	H	H	H	H	H	H	obs
	10b	P	Mean Time To Restore - Design	H	H	H	H	H	H	obs
	10c	P	Mean Time To Restore - UNE	H	H	H	H	H	H	obs
	11a	P	Trouble Report Rate - POTS	H	H	H	H	H	H	obs
	11b	P	Failure Frequency - Design	L	L	L	*	*	*	obs
	11c	P	Trouble Report Rate - UNE	H	H	H	H	H	H	obs
Interconnection	12	B	Average Trunk Restoration Interval for Service Affecting Trunk Groups	L	H	H	M	M	H	obs
Local Number Portability	13	B	% Pre-mature Disconnects (Coordinated Cutovers)	L	H	H	M	M	H	obs
OSS	14	B	OSS Interface Availability	*	*	*	M	M	H	meas
	15	B	Average Response Time for OSS preorder intefaces	L	L	L	M	M	M	obs/cap
	16	P	Order Process Percent Flow Through	L	L	L	H	H	H	obs/cap
	17	B	Percent Trunk Blockage	M	H	H	M	H	H	obs/cap
	18	B	Common Transport Trunk Blockage	*	*	*	M	M	H	meas
Collocation	19	B	% missed collocation due date	M	H	H	M	M	H	obs
Billing	20	B	Billing Timeliness	L	L	L	M	M	H	obs/cap

* NO damages apply

ATTACHMENT A-56

YEAR 1	Tier 1 ($M)		Tiers 2 & 3 ($M)	
State	Annual	Monthly	Annual	Monthly